

1 **DIRECT TESTIMONY OF**

2 **ROSE M. JACKSON**

3 **ON BEHALF OF**

4 **SOUTH CAROLINA ELECTRIC & GAS COMPANY**

5 **DOCKET NO. 2012-2-E**

6
7 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

8 A. My name is Rose M. Jackson, and my business address is 1400 Lady Street,
9 Columbia, South Carolina 29201.

10
11 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

12 A. I am employed by SCANA Services, Inc. ("SCANA Services") as General
13 Manager, Supply and Asset Management.

14
15 **Q. PLEASE DESCRIBE YOUR DUTIES RELATED TO NATURAL GAS AND**
16 **URANIUM PROCUREMENT FOR ELECTRIC GENERATION IN YOUR**
17 **CURRENT POSITION.**

18 A. I am responsible for managing the department that provides natural gas and
19 uranium procurement services for the generating facilities operated by South
20 Carolina Electric & Gas ("SCE&G"). With regard to natural gas, these
21 responsibilities include procurement of natural gas supply and capacity;
22 nominations and scheduling; gas accounting; and state and federal regulatory

1 issues related to supply, capacity, and asset management. With regard to uranium
2 procurement, these responsibilities include procurement of natural uranium and
3 conversion services.

4
5 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
6 **WORK EXPERIENCE.**

7 A. I graduated from the University of South Carolina in 1988 with a Bachelor
8 of Science degree in Accounting. Following graduation, I worked for
9 approximately three (3) years as an accountant for a national security services
10 firm. In 1992, I began my employment with SCANA as an accountant. Over the
11 years, I have held varying positions of increasing responsibility related to gas
12 procurement, interstate pipeline and local distribution company scheduling, and
13 preparation of gas accounting information. In May 2002, I became Manager of
14 Operations and Gas Accounting with SCANA Services where I was responsible
15 for gas scheduling on interstate pipelines and gas accounting for all SCANA
16 subsidiaries. In November 2003, I became Fuels Planning Manager where I
17 assisted all SCANA subsidiaries with strategic planning and special projects
18 associated with natural gas. I held this position until promoted to my current
19 position in December 2005.

1 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY**
2 **COMMISSION?**

3 A. Yes, I have testified before this Commission on several occasions. I have
4 also testified before the Georgia Public Service Commission and the North
5 Carolina Utilities Commission.

6
7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
8 **PROCEEDING?**

9 A. The purpose of my direct testimony is to provide information about the
10 natural gas and nuclear fuel purchasing process for SCE&G generation and to
11 discuss natural gas and uranium prices for the review period of January 1, 2011
12 through December 31, 2011 (“Review Period”) and the near term outlook.

13
14 **I. NATURAL GAS PURCHASING**

15 **Q. PLEASE DESCRIBE HOW YOUR DEPARTMENT MAKES NATURAL**
16 **GAS PURCHASING DECISIONS.**

17 A. The natural gas purchases made by the Natural Gas and Uranium
18 Procurement Department (“Department”) are driven by the needs of the electric
19 generation group. We supply SCE&G’s Economic Resource Commitment Group
20 (“ERC”) with current market information that they use in resource commitment
21 modeling for our electric generation plants. The ERC requests natural gas price
22 quotes and market information from the Department on a continual basis. The

1 ERC uses current natural gas prices as one input into its dispatch modeling to
2 determine the most economical means of reliably meeting the electricity needs of
3 our customers.

4 The actual natural gas purchasing decisions are driven by the unit
5 commitment decisions made by the ERC. After ERC decides that natural gas is
6 the economical choice for providing reliable power to our customers, the
7 Department is directed to purchase natural gas supplies for delivery with a stated
8 term and volume at the best available current market prices.

9
10 **Q. ARE YOUR CONTRACTS TO PURCHASE NATURAL GAS NORMALLY**
11 **SHORT-TERM OR LONG-TERM?**

12 A. We have standing industry standard contracts with a group of suppliers that
13 set forth many of the terms and conditions of delivery. Price and quantity,
14 however, are determined at the time of purchase because the purchase of natural
15 gas supplies for electric generation is generally made within hours of the need to
16 burn the gas to generate electricity. The purchase is a short-term transaction that
17 is completed using current market pricing for natural gas in the market.

18 The most common prices quoted for daily natural gas deliveries are the
19 day-ahead gas price. The Gas Daily Average or GDA, for example, is an average
20 of these day-ahead prices, reported on a historical basis the next business day.

21 The day-ahead natural gas market, however, closes at mid-day of the day
22 before the natural gas is delivered. Because some unit commitment decisions may

1 not be made until the following morning, GDA prices are not available for all
2 supply purchases for electric generation. In these situations, the natural gas we
3 purchase for electric generation is made in the intraday market.
4

5 **Q. WHAT TOOLS DO YOU USE TO INFORM YOUR NATURAL GAS**
6 **PURCHASING DECISIONS?**

7 A. The most important tools used to inform our purchasing decisions are the
8 Department's collective experience in national natural gas markets, careful
9 observation and evaluation of movements in market-based prices, and continual
10 surveys of our suppliers for pricing information. These tools are by far the most
11 important and most accurate in helping us determine market-based prices for
12 natural gas supplies being purchased on the "spot market."

13 Another tool we use to inform our purchasing decisions is the
14 Intercontinental Exchange ("ICE"), which is a real time electronic trading board.
15 The shortcoming of the ICE service as with other pricing services is that not all
16 trades are reflected in these services. Nevertheless, ICE is one of the most widely
17 used sources of pricing information and provides a reliable indication of current
18 market prices.
19
20
21

1 **Q. DOES NEW YORK MERCHANTILE EXCHANGE (“NYMEX”) PRICING**
2 **INFLUENCE THE NATURAL GAS BENCHMARK PRICE FOR EITHER**
3 **THE URQUHART COMBINED CYCLE UNITS OR THE JASPER**
4 **FACILITY?**

5 A. NYMEX is a financial market which captures real-time trading data and
6 information about the projected price of natural gas and other commodities at
7 various times in the future. Therefore, we use NYMEX pricing data infrequently
8 for calculating a benchmark price relative to gas supply for either Urquhart or
9 Jasper. Since these units are intermediate turbines, the ERC decides whether to
10 operate these facilities based upon the daily demands of SCE&G’s customers and
11 its system. Consequently, most of the natural gas purchasing decisions for these
12 plants are short-term, that is, for a day at a time or across a weekend or holiday
13 period.

14
15 **Q. WHAT NATURAL GAS TRANSPORTATION CAPACITY DOES SCE&G**
16 **HAVE FOR THE URQUHART COMBINED CYCLE UNITS AND THE**
17 **JASPER FACILITY?**

18 A. SCE&G has a long-term capacity contract with Southern Natural Gas
19 Company for firm transportation service of 51,050 dekatherms (“Dt”) per day to
20 serve Urquhart. The Department, as requested by the ERC, procures the natural
21 gas needed to supply Urquhart. We have in excess of 50 different suppliers that

1 we survey at various times to secure our natural gas supplies at market-based rates
2 and from entities that have proven to be creditworthy and reliable.

3 For Jasper, SCE&G has contracted with SCANA Energy Marketing, Inc.
4 (“SEMI”) for firm natural gas capacity of 120,000 Dt per day. Under this
5 Commission-approved contract, SEMI provides natural gas supply when needed.
6

7 **Q. PLEASE DESCRIBE THE MOVEMENT OF NATURAL GAS PRICES**
8 **DURING THE CURRENT PERIOD UNDER REVIEW.**

9 A. As depicted in Exhibit No. ____ (RMJ-1) attached hereto, 2011 began with
10 natural gas prices in the \$4.65/Dt area as cold weather boosted demand and prices
11 at the end of 2010. Moderate weather in February caused prices to dip to
12 \$3.73/Dt. Due to an increase in demand for natural gas at natural gas-fired electric
13 generating facilities, the market peaked for the year at \$4.98/Dt in early June.
14 During the remaining half of the year, prices were less volatile and trended down.
15 The combination of an uneventful hurricane season, mild temperatures, high
16 storage levels and strong production led prices to the lowest point for natural gas
17 prices for the year at \$2.96/Dt on December 31, 2011.

18 The near term forecast indicates natural gas prices are likely to remain
19 fairly flat due to domestic production from shale supply. However, short term
20 price volatility can result from dramatic changes in either supply or demand
21 components. The fundamental factors of such changes may include, but are not
22 limited to, weather, increases in consumption associated with an economic

1 recovery, increases in supplies from shale production, changes in storage
2 inventory levels, and/or constraints in pipeline capacity.

4 II. NUCLEAR FUEL PURCHASING

5 Q. PLEASE DESCRIBE THE NUCLEAR FUEL CYCLE.

6 A. Uranium ore is the source of fuel used to generate electricity in nuclear
7 reactors. Naturally occurring uranium primarily consists of two isotopes, 0.7%
8 Uranium-235 and 99.3% Uranium-238. As depicted in Exhibit No.____ (RMJ-2)
9 attached hereto, uranium must undergo a series of processes to produce a useable
10 fuel before it can be used in a reactor for electricity generation. These processes
11 are mining and milling, conversion, enrichment, and fabrication. In the first stage,
12 uranium is mined. Once the ore is mined it is sent to a mill where it is crushed
13 into smaller pieces and then introduced to a slurry in which a strong mixed
14 solution is used to dissolve the uranium. At this point in the mining and milling
15 process, the uranium is then dried and commonly referred to as yellowcake, also
16 known as uranium oxide (“ U_3O_8 ”) concentrate. In the next step of the process,
17 known as conversion, the U_3O_8 goes through a chemical process in which it is
18 converted into uranium hexafluoride (“ UF_6 ”). The UF_6 then becomes the
19 feedstock required in the isotopic separation process, known as enrichment. Once
20 the UF_6 is enriched to the desired level, it is converted to uranium dioxide (“ UO_2 ”)
21 powder and formed into pellets. This process, and the subsequent steps of

1 inserting the fuel pellets into fuel rods and bundling the rods into fuel assemblies
2 for use in nuclear reactors, is referred to as fabrication.

3
4 **Q. PLEASE DESCRIBE HOW YOUR DEPARTMENT MAKES**
5 **PURCHASING DECISIONS FOR NUCLEAR FUEL.**

6 A. The responsibilities related to nuclear fuel procurement are shared between
7 the Department and the Nuclear Design and Analysis department (“NDA”). NDA
8 prepares a forecasted refueling schedule which is reviewed by the Department on
9 an annual basis. This forecast forms the foundation for the nuclear fuel
10 requirements forecast. Once the nuclear fuel requirements forecast is developed,
11 the Department is primarily responsible for procuring U₃O₈ and conversion
12 services and NDA is primarily responsible for procuring enrichment and
13 fabrication services. Collectively, the Department and NDA form the Nuclear Fuel
14 Procurement team (“Team”). The Team determines nuclear fuel requirements,
15 shares market information and reviews offers related to all segments of the nuclear
16 fuel cycle.

17
18 **Q. ARE YOUR CONTRACTS TO PURCHASE NUCLEAR FUEL**
19 **NORMALLY SHORT-TERM OR LONG-TERM?**

20 A. Due to the long lead time required to process uranium prior to being loaded
21 in SCE&G’s reactor, our contracts are normally long-term contracts. Currently
22 the Company has long term commitments for uranium and conversion services,

1 enrichment and fabrication for V.C. Summer Unit One. The Team monitors the
2 nuclear fuel market on an ongoing basis and evaluates spot market opportunities
3 from time to time that may supplement long term contract supplies as appropriate.
4 Included in the procurement process is the Company's contingency reserve. The
5 nuclear fuel contingency reserve targets are designed to provide security of supply
6 for future requirements by mitigating potential market disruptions.

7
8 **Q. PLEASE DESCRIBE THE MOVEMENT OF NUCLEAR FUEL PRICES**
9 **DURING THE CURRENT PERIOD UNDER REVIEW.**

10 A. The nuclear fuels market is comprised of two types of pricing scenarios:
11 spot and long term. Spot prices typically represent any transaction taking place
12 within a year while long term prices require a commitment for some period
13 beyond one year. Each of the nuclear fuel processes can be purchased individually
14 or bundled at any point in the fuel cycle, with the exception of fabrication.
15 Fabrication is a complex process that has specific requirements for each individual
16 reactor and therefore is typically sourced to a single supplier with long term
17 agreements. Over the past 5 years the market has seen some volatility, mostly
18 related to the U₃O₈ pricing component. More recently, prices for uranium and the
19 other processes in the nuclear fuel cycle have remained relatively flat, for both
20 short term and long term pricing.

1 **Q. WHAT REQUEST DOES SCE&G MAKE OF THE COMMISSION IN**
2 **THIS PROCEEDING?**

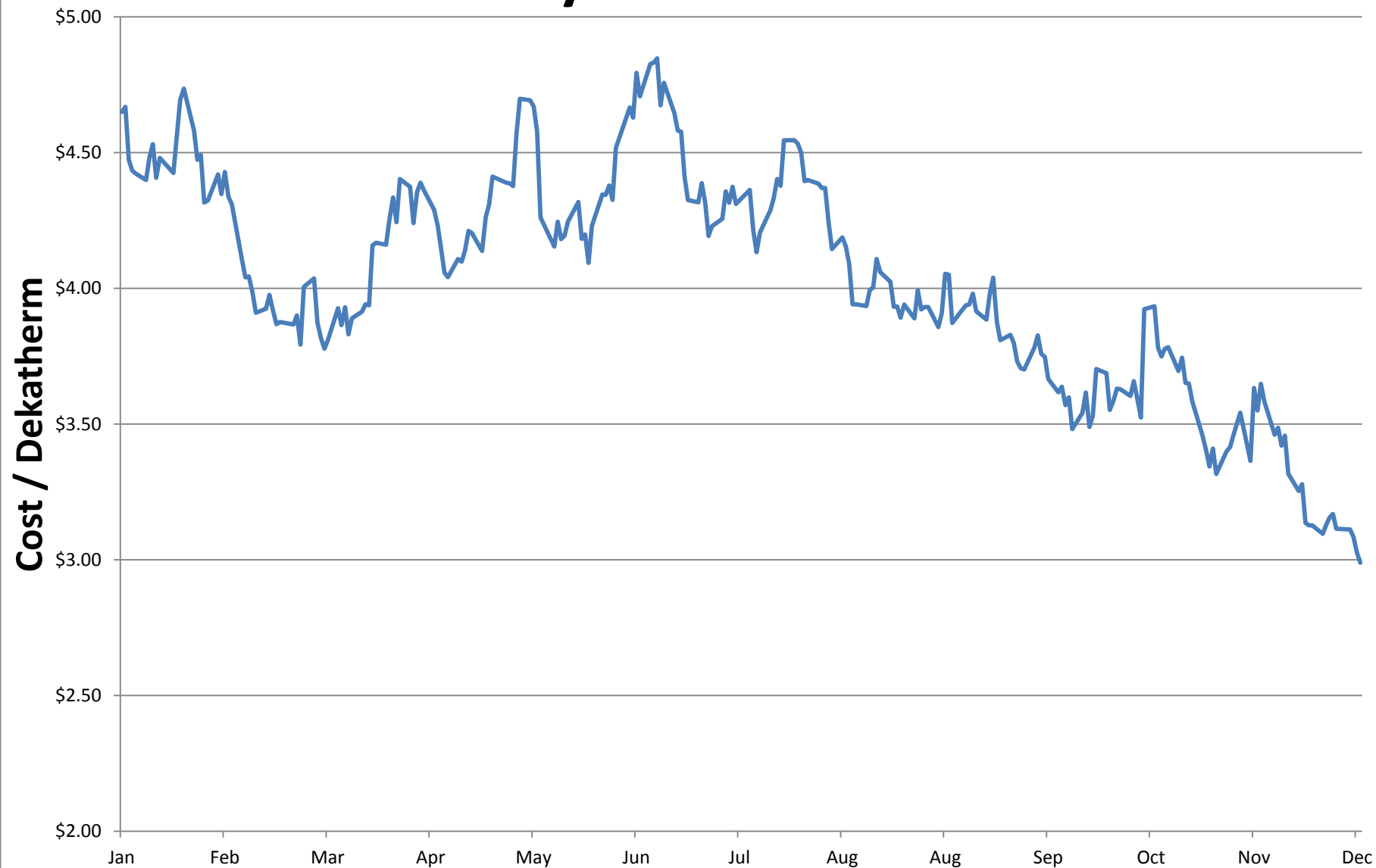
3 A. During the Review Period, the Natural Gas and Uranium Procurement
4 Department made diligent and prudent efforts to obtain reasonable market-based
5 prices for the reliable supply of nuclear fuel and natural gas for electric generation
6 and to procure the necessary capacity for the delivery of that supply. Therefore,
7 on behalf of SCE&G, I respectfully request that the Commission find that the
8 Company's fuel purchasing practices were reasonable and prudent for the Review
9 Period.

10
11 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

12 A. Yes.

Daily Settle Prices

Exhibit _____ RMJ-1



The Nuclear Fuel Cycle

